

- $V_{j,i}$ ,  $V_{j,noz}$ ,  $V_{j,bucket}$  - stator frame of reference
- $V'_{j,i}$ ,  $V'_{j,noz}$ ,  $V'_{j,bucket}$  - rotor frame of reference
- $U$  : rotor speed ( $\omega \cdot r$ )
- $\alpha_2$ ,  $\beta_3$  : design parameters

Fig. 2

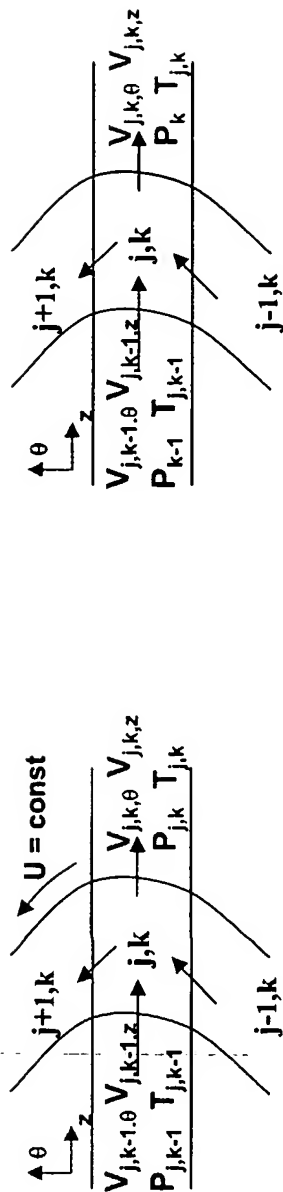


Fig. 3

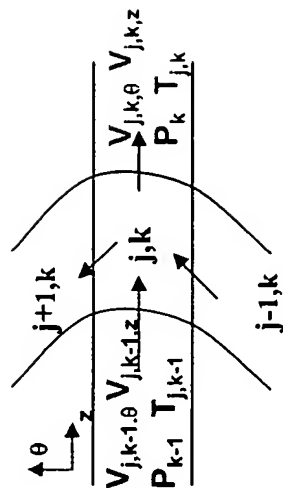


Fig. 4

Measurement											Model		
MW	CPD (psig)	CPD (psia)	CPDa (atm)	CPR (calc)	TTRF (F)	TTXN (F)	CTD (F)	IGV (deg)	SH (deg)		Tmp@peak (F)	Tmp@trough (F)	TTRF (F)
69.7	195.2	209.63	14.26	14.53	2365	1140	694	84.2	15.25		2485	2235	2367
65	191	205.43	13.98	14.24	2310	1081	686	83.9	15.97		2430	2180	2311.9
60.1	179.2	193.63	13.18	13.42	2299	1092	670	75.6	16.85		2418	2168	2299.8
55.1	168.9	183.33	12.47	12.70	2286	1102	659	68.4	17.8		2405	2155	2286
50	156.8	171.23	11.65	11.87	2277	1119	643	61.9	18.83		2395	2145	2276.8
45	145.6	160.03	10.89	11.09	2250	1128	633	56.7	19.9		2370	2120	2251.7

Fig. 5

10065710

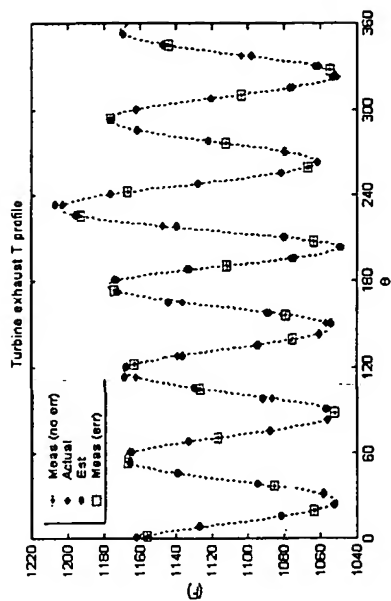


Fig. 6(a)

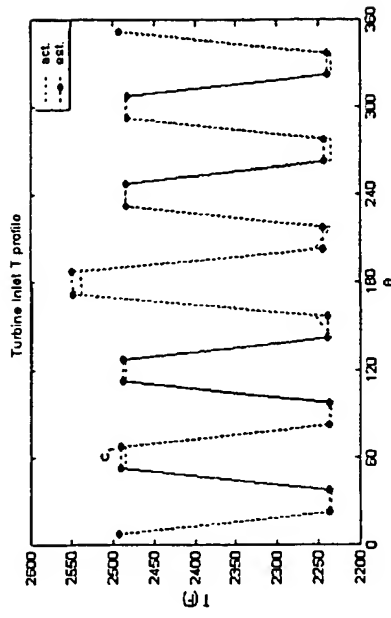


Fig. 6(b)

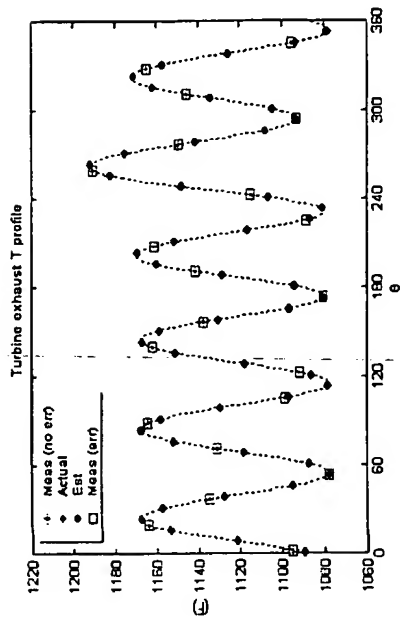


Fig. 7(a)

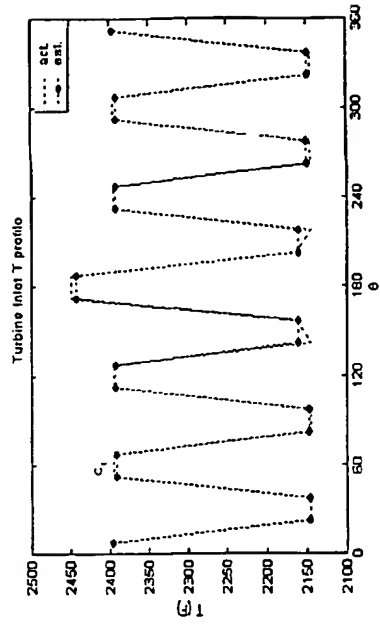


Fig. 7(b)

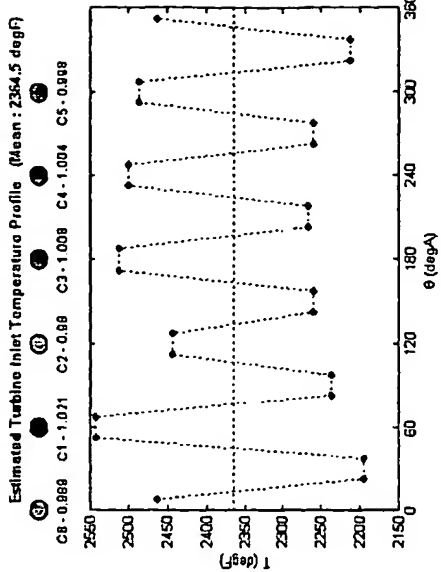


Fig. 8(b)

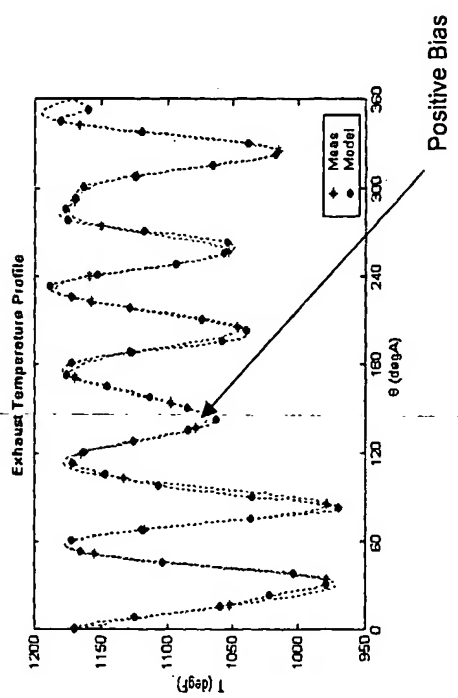


Fig. 8(a)

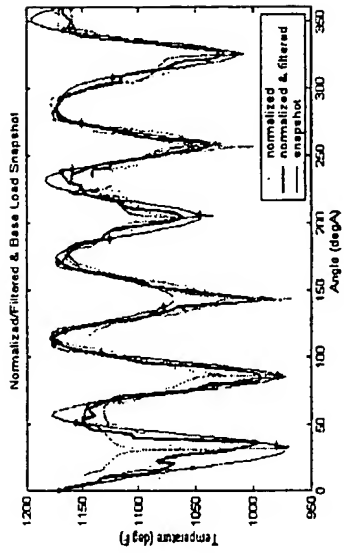


Fig. 9

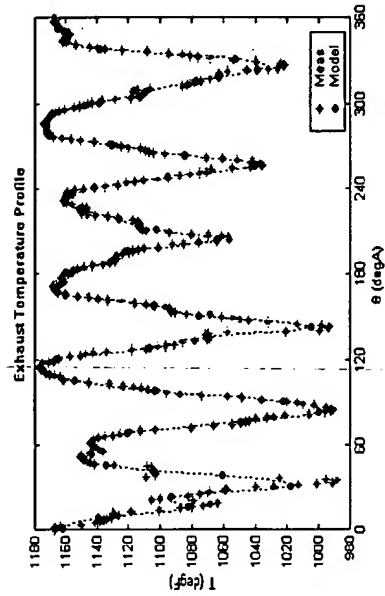


Fig. 10(a)

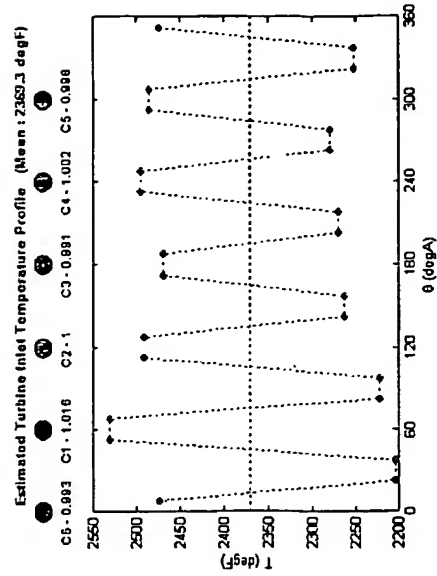


Fig. 10(b)